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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/660,978

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Ludmila Cherkasova

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HEWLETT PACKARD COMPANY

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INTELLECTUAL PROPERTY ADMINISTRATION

FORT COLLINS, CO 80527-2400

EXAMINER

KIM, TAE K

ART UNIT

PAPER NUMBER

2109

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/660,978

Applicant(s)

CHERKASOVA ET AL.

Examiner

Tae K. Kim

Art Unit

2109

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☒ Claim(s) 1-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>Oct. 2, 2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is in response to the application filed on September 12, 2003 where claims 1 – 37, of which claims 1, 16, 25, 28, and 32 are in independent form, are presented for examination.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 – 15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. As stated, there is no possibility that the capacity planning tool can be implemented; it is computer code per se.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 – 9, 11 – 15, and 25 – 37 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,516,350 invented by Leon L. Lumelsky et al (hereinafter referenced as “Lumelsky”).

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1. Regarding Claim 1, Lumelsky discloses a method (Col. 5, Lines 12-15) comprising of receiving, into a capacity planning tool (Service Control Plane), configuration information for at least one streaming media server (Col. 8, Lines 66-67; Col. 9, Lines 1-8; "monitors the availability of the resources"), receiving, into said capacity planning tool, workload information for a workload of client accesses of streaming media files from a server (Col. 8, Lines 66-67; Col. 9, Lines 1-8; "finds their rate, density and proximity"), and said capacity planning tool evaluating a capacity of the at least one streaming media server for supporting the workload (Col. 7, Lines 4-8; "monitoring with respect to the performance of multiple end resources and clients and their usage patterns so as to provide parameters on where, when, and how to satisfy a request").
2. Regarding Claim 2, Lumelsky discloses all the limitations of Claim 1 and further discloses that said configuration information includes identification of size of memory of said at least one streaming media server (Col. 8, Lines 20-22; Fig. 10).
3. Regarding Claim 3, Lumelsky discloses all the limitations of Claim 2 and further discloses that said configuration information further includes disk configuration of said at least one streaming media server (Col. 12, Lines 26-34; Fig. 10).
4. Regarding Claim 4, Lumelsky discloses all the limitations of Claim 1 and further discloses that said workload information includes identification of number of concurrent client accesses of said streaming media files over a period of time (Col. 7, Lines 4-8; Fig. 9).
5. Regarding Claim 5, Lumelsky discloses all the limitations of Claim 4 and further

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discloses that said workload information further includes identification of a corresponding encoding bit rate of each of said streaming media files accessed (Col. 8, Lines 66-67; Col. 9, Lines 1-2).

6. Regarding Claim 6, Lumelsky discloses all the limitations of Claim 1 and further discloses that said workload information comprises information from an access log collected over a period of time (Col. 6, Lines 18-21).

7. Regarding Claim 7, Lumelsky discloses all the limitations of Claim 1 and further discloses that said evaluating comprises of computing a cost corresponding to resources of said at least one streaming media server that are consumed in supporting the workload (Col. 10, Lines 45-47, 51-53).

8. Regarding Claim 8, Lumelsky discloses all the limitations of Claim 7 and further discloses that said computing said cost comprises computing a cost of consumed resources for a stream in said workload having a memory access to a streaming media file and computing a cost of consumed resources for a stream in said workload having a disk access to a streaming media file (Col. 9, Lines 58-64; Col. 12, Lines 26-34).

9. Regarding Claim 9, Lumelsky discloses all the limitations of Claim 1 and further discloses that said evaluating comprises of computing a service demand for said at least one streaming media server supporting said workload (Col. 8, Lines 66-67; Col. 9, Lines 1-8).

10. Regarding Claim 11, Lumelsky discloses all the limitations of Claim 1 and further discloses that the method receives at least one service parameter (Col. 9, Lines 58-64).

11. Regarding Claim 12, Lumelsky discloses all the limitations of Claim 11 and

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further discloses that said at least one service parameter comprises information identifying at least one performance criteria desired to be satisfied by said at least one streaming media server under the workload (Col. 9, Lines 58-64).

12. Regarding Claim 13, Lumelsky discloses all the limitations of Claim 12 and further discloses that said at least one performance criteria specifies a minimum percentage of time that said at least one streaming media server is desired to be capable of supporting the workload (Col. 9, Lines 58-67; Col.10, Lines 1-6).

13. Regarding Claim 14, Lumelsky discloses all the limitations of Claim 11 and further discloses that said at least one service parameter comprises information identifying a constraint (Col. 9, Lines 58-67; Col.10, Lines 1-6).

14. Regarding Claim 15, Lumelsky discloses all the limitations of Claim 11 and further discloses that said evaluating further comprises of evaluating whether said at least one streaming media server satisfies said at least one service parameter (Col. 9, Lines 58-67; Col.10, Lines 1-6).

15. Regarding Claim 25, Lumelsky discloses a system (Col. 5, Lines 12-15) comprising of means for receiving configuration information for a plurality of different system configurations (Col. 8, Lines 66-67; Col. 9, Lines 1-8; "monitors the availability of the resources"), means for receiving workload information for a workload of client accesses of streaming media files from a server (Col. 8, Lines 66-67; Col. 9, Lines 1-8; "finds their rate, density and proximity"), and means for evaluating the capacity of each of said plurality of different system configurations for supporting said workload (Col. 8, Lines 66-67; Col. 9, Lines 1-8;").

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16. Regarding Claim 26, Lumelsky discloses all the limitations of Claim 25 and further discloses a means for determining an optimal one of said plurality of different system configurations for supporting said workload (Col. 9, Lines 45-50).

17. Regarding Claim 27, Lumelsky discloses all the limitations of Claim 26 and further discloses a means for determining the most cost-effective one of said plurality of different system configurations for supporting said workload according to determined service parameters (Col. 10, Lines 45-53).

18. Regarding Claim 28, Lumelsky discloses a method (Col. 5, Lines 12-15) comprising of receiving workload information identifying an expected workload of client accesses of streaming media files from a server (Col. 8, Lines 66-67; Col. 9, Lines 1-8; "finds their rate, density and proximity") and determining a service demand profile for at least one server configuration under evaluation for evaluating a capacity of said at least one server configuration for supporting the expected workload (Col. 7, Lines 4-8; "monitoring with respect to the performance of multiple end resources and clients and their usage patterns so as to provide parameters on where, when, and how to satisfy a request").

19. Regarding Claim 29, Lumelsky discloses all the limitations of Claim 28 and further discloses a method further comprising of receiving at least one service parameter (Col. 9, Lines 45-50).

20. Regarding Claim 30, Lumelsky discloses all the limitations of Claim 29 and further discloses a method wherein said at least one service parameter comprises

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information identifying at least one performance criteria desired to be satisfied by said at least one server configuration under the expected workload (Col. 9, Lines 45-50).

21. Regarding Claim 31, Lumelsky discloses all the limitations of Claim 29 and further discloses a method further comprising of evaluating the determined service demand profile for the at least one server configuration to determine whether the at least one server configuration satisfies the received at least one service parameter (Col. 9, Lines 45-50 and 58-64).

22. Regarding Claim 32, Lumelsky discloses a system (Col. 5, Lines 12-15) comprising of a media profiler operable to receive a client access log collected over a period of time for a service provider's site (Col. 10, Lines 21-26; "user preferences, such as ...interactivity level") and generate a workload profile for the service provider's site (Col. 7, Lines 4-8; "monitoring with respect to the performance of multiple end resources and clients and their usage patterns so as to provide parameters on where, when, and how to satisfy a request") and a capacity evaluator operable to receive the generated workload profile and evaluate at least one server configuration's capacity for supporting the site's workload (Col. 9, Lines 45-50, "mapping...requests to the particular server(s) based on factors such as: aggregate demand statistics and willingness of the servers to provide the requested services").

23. Regarding Claim 33, Lumelsky discloses all the limitations of Claim 32 and further discloses a system wherein said capacity evaluator is further operable to receive configuration information for said at least one server configuration (Col. 10, Lines 33-39).

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24. Regarding Claim 34, Lumelsky discloses all the limitations of Claim 32 and further discloses a system wherein in evaluating said at least one server configuration's capacity, said capacity evaluator determines whether said at least one server configuration is capable of supporting the site's workload in accordance with at least one service parameter (Col. 10, Lines 26-39).

25. Regarding Claim 35, Lumelsky discloses all the limitations of Claim 34 and further discloses a system wherein said at least one service parameter comprises information identifying at least one performance criteria desired to be satisfied by said at least one server configuration under the site's workload (Col. 10, Lines 26-39).

26. Regarding Claim 37, Lumelsky discloses all the limitations of Claim 32 and further discloses a system wherein in evaluating said at least one server configuration's capacity said capacity evaluator is operable to generate a service demand profile for said at least one server configuration (Col. 9, Lines 58-64).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16 – 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lumelsky.

27. Regarding Claim 16, Lumelsky discloses a method and system (Col. 5, Lines 12-15) comprising of receiving, into said capacity planning tool, workload information for a

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workload of client accesses of streaming media files from a server (Col. 8, Lines 66-67; Col. 9, Lines 1-8; "finds their rate, density and proximity"), and said capacity planning tool evaluating a capacity of the at least one streaming media server for supporting the workload (Col. 7, Lines 4-8; "monitoring with respect to the performance of multiple end resources and clients and their usage patterns so as to provide parameters on where, when, and how to satisfy a request"). Lumelsky does not specifically disclose that this method would be in computer-executable software code or stored to a computer-readable medium.

However, it is commonly known to one skilled in the art at the time of the application that any method decoding and processing information in an electrical device is executed through program instructions stored in the electrical device; in particular computer-executable software code for servers or computers used to configure information. Furthermore, these instructions are stored in a variety of computer readable media, such as within the device's memory, flash-drives, compact disks, etc. It is obvious to one skilled in the art that any method for decoding or processing electronic information is in the form of program instructions to be read by an electronic device, thus stored in computer readable media. Some of the benefits of using computer readable media to store the program instructions are to allow the electronic device to have more flexibility, such as allowing other processes to run, and to ease the transferability of the instructions, and updates to them, onto the electronic device.

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28. Regarding Claim 17, Lumelsky discloses all the limitations of Claim 16 and further discloses a code for receiving configuration information for said at least one system configuration (Col. 8, Lines 66-67; Col. 9, Lines 1-8).

29. Regarding Claim 18, Lumelsky discloses all the limitations of Claim 16 and further discloses a code for determining whether said at least one system configuration is capable of supporting said workload in accordance with at least one service parameter (Col. 10, Lines 26-39).

30. Regarding Claim 19, Lumelsky discloses all the limitations of Claim 18 and further discloses a code wherein said at least one service parameter comprises information identifying at least one performance criteria desired to be satisfied by said at least one system configuration under the workload (Col. 9, Lines 58-64).

31. Regarding Claim 20, Lumelsky discloses all the limitations of Claim 16 and further discloses a code for generating a workload profile for the received workload information (Col. 6, Lines 18-21; Col 9, Lines 45-64; Col. 10, Lines 19-26).

32. Regarding Claim 21, Lumelsky discloses all the limitations of Claim 20 and further discloses a code wherein the received workload information comprises an access log collected over a period of time (Col. 10, Lines 19-26).

33. Regarding Claim 22, Lumelsky discloses all the limitations of Claim 20 and further discloses a code wherein said workload profile comprises of a plurality of different points in time, identification of a number of concurrent client accesses, wherein the number of concurrent client accesses are categorized into corresponding encoding

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bit rates of streaming media files accessed thereby and are further sub-categorized into either memory or disk accesses.

34. Regarding Claim 23, Lumelsky discloses all the limitations of Claim 16 and further discloses a code for generating a service demand profile for said at least one system configuration (Col. 9, Lines 58-64).

35. Regarding Claim 24, Lumelsky discloses all the limitations of Claim 16 and further discloses a code for evaluating a capacity of a plurality of different system configurations and determining an optimal one of said plurality of different system configurations for supporting the workload (Col. 10, Lines 45-53).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lumelsky as applied to Claim 1 above, and further in view of U.S. Patent 5,778,683 invented by Kirk H. Drees (hereinafter referenced as "Drees").

36. Regarding Claim 10, Lumelsky discloses all the limitations of Claim 1 as stated above. Lumelsky does not specifically disclose that computing the service demand comprises of the equation

$$Demand = \sum_{i=1}^{K_w} N_{X_{w_i}}^{memory} \times cost_{X_{w_i}}^{memory} + \sum_{i=1}^{K_w} N_{X_{w_i}}^{disk} \times cost_{X_{w_i}}^{disk}$$

wherein the workload W comprises $X_w = X_1, \dots, X_{K_w}$ set of different encoded bit rates of files served in the workload, $N_{X_{w_i}}^{memory}$ is a number of streams in the workload having a memory access to a subset of files encoded at X_{w_i} Kb/s, $cost_{X_{w_i}}^{memory}$ is a cost of consumed resources for a stream having a memory access to a file encoded at

X_{w_i} Kb/s, $N_{X_{w_i}}^{disk}$ is a number of streams in the workload having a disk access to a

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subset of files encoded at X_{w_i} Kb/s, , and $cost_{X_{w_i}}^{disk}$ is a cost of consumed resources for a stream having a disk access to a file encoded at X_{w_i} Kb/s .

Drees discloses an equation of calculating demand for a given resource where the demand is the sum of the maximum demand times the maximum demand charge for both "on-peak" and "off-peak" usage times. It is obvious to one skilled in the art that the Drees calculation could be used for multiple measurements, for example, a building with multiple apartment units. The total demand for services is the sum of both the accumulation of "on-peak" usage rates times the amount used and the accumulation of "off-peak" usage rates times the amount used by all the units requesting that service. If the pricing for services varies upon when or where the services are coming from, then multiplying the number of requests with the associated service rate and combining those products will quickly produce the demand and for that service.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lumelsky as applied to Claim 32 above, and further in view of U.S. Patent 6,389,510 B1 invented by Kuo-Wei H. Chen (hereinafter referenced as "Chen").

37. Regarding Claim 36, Lumelsky discloses all the limitations of Claim 32 as stated above and further discloses a system wherein said workload profile comprises a plurality of different points in time, identification of a number of concurrent client accesses, wherein the number of concurrent client accesses are categorized into corresponding encoding bit rates of streaming media files accessed thereby (Col. 8, Lines 66-67; Col. 9, Lines 1-8, 45-50, 58-64; Col. 10, Lines 45-53). However, it does

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not specifically disclose that the concurrent client accesses are further sub-categorized into either memory or disk accesses.

Chen discloses of categorizing web objects transmitted from the server device as either cacheable or non-cacheable depending on whether that particular object is to be stored in the caching device (Col. 6, Lines 25-29). It would be obvious to one skilled in the art to further categorize whether or not the streaming media files are either cacheable or non-cacheable (either to be accessed through memory or through storage disks). Streaming media files that are in higher demand would be stored in cache (memory) for quicker access by the requesting clients. The latency found in accessing information found in storage disks, due to its mechanical movements, can hinder the performance of streaming media.

Additional References

Additional references that are relevant to the pending application and not cited:

U.S. Patent 6,594,699 B1; U.S. App. 2001/0027479 A1; U.S. App. 2002/0029273 A1; U.S. Patent 5,732,239 AA1; U.S. Patent 6,067,107 A1; U.S. Patent 6,263,361 B1; U.S. Patent 6,279,039 B1; U.S. Patent 6,330,609 B1; U.S. App. 2002/0083124 A1; U.S. App. 2002/0129048 A1; U.S. Patent 6,466,980 B1; U.S. App. 2002/0156552 A1

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tae K. Kim, whose telephone number is (571) 270-1979. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Coby, can be reached on (571) 272-4017. The fax phone number for submitting all Official communications is (703) 872-9306. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the examiner at (571) 270-2979.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

TKK

7/11/2007


FRANTZ COBY
SUPERVISORY PATENT EXAMINER